

Salicylate Toxicity in Monkeys

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OBJECTIVE: The etiology of Reye's syndrome is unknown. One possible cause that has been suggested is the ingestion of salicylate. In man, salicylate intoxication is clinically very similar to Reye's syndrome. This study was an attempt to produce Reye's syndrome in young monkeys by administering salicylate.

DESCRIPTION: The study was to be conducted in 2 parts; one acute, involving administration of 150 mg of salicylate per kg. body weight every 6 hours for 48 hours to fasted animals, and one chronic, involving the administration of 40 mg. of salicylate per kg. body weight every 8 hours for 10 days to unfasted monkeys. Blood, spinal fluid and liver biopsies were to be collected before, during and after the study. All animals were to be observed regularly for clinical signs of illness and were to be euthanized and necropsied 8 hours after the last treatment. Control animals were to be administered sodium chloride in equivalent amounts and handled similarly.

Detection and evaluation of Reye's syndrome was to be based on clinical observations; changes in blood glucose, CO₂, SGOT, SGPT, and prothrombin time; alterations in spinal fluid glucose and glutamine levels; and histopathologic changes in the liver, kidneys, heart and brain.

PROGRESS: The acute phase of the study was conducted with 5 *Macaca fascicularis*, 3 receiving salicylate and 2 sodium chloride. In this preliminary trial, clinical, biochemical and pathological changes occurred but they could not be satisfactorily differentiated from the changes observed in the control animals which presumably were due to the prolonged fasting (96 hours). Before the study could be modified and repeated, the principal investigator departed. No further investigation is contemplated.

SUMMARY: The results of a preliminary study of the possible relationship between acute salicylate intoxication and Reye's syndrome were inconclusive.